ETC PASK (CONSTANT HEAD) PERMEAMETER QUICK REFERENCE FIELD PROCEDURE SHEET

DYNAMIC
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Note: The User Guide should be read in full, prior to using the permeameter.

1. Using the Riverside/Bucket auger, excavate a well hole to the desired depth.

2. Use the "two finger method / two turn rule" (refer to Section 3.3.3 of User Guide) to minimize the potential for smearing and compaction.

3. Use the twisted wire brush provided with the kit to scarify the side walls of the well hole and remove any smeared layer. Avoid "over-brushing" the hole which could increase the well hole diameter.

4. Stand the permeameter upside down, fill with water to the air inlet hole and apply the end cap so it locks into place on the spring clip button.

5. Invert the permeameter into the hole, ensuring that it rests on the bottom of the well hole. Carefully lean the permeameter against the side of the well hole so that it is stable and will not shift during the test.

6. Take regular readings on the clear scale on the upper reservoir and record the associated time.

X = CROSS SECTIONAL AREA OF RESERVOIR

r = RATE OF FALL OF WATER IN RESERVOIR

AIR INLET HOLE (CONTROLS HEIGHT OF PONDED WATER IN WELL)

WETTING FRONT (MUST NOT APPEAR ON SOIL SURFACE)

H = HEIGHT OF PONDED WATER IN WELL

SOIL MUST BE AT OR BELOW FIELD (MOISTURE) CAPACITY

WETTING ZONE

FIELD SATURATED BULB

>20 cm

a = WELL HOLE RADIUS

WATER TABLE

7. Allow sufficient time for the flow out of the permeameter to reach equilibrium (approach a constant quasi "steady state" flow rate). Typically this is achieved after obtaining 3 to 5 readings which are the same. Record the value for the "steady state" rate of fall (R) in cm/min.

8. Based on your observations of the soil structure and texture, estimate the appropriate $\alpha*$ value (refer to Table 2.1 of User Guide and/or the **ETC Quick Field Reference Tables**).

9. Determine the *field saturated hydraulic conductivity,* Kfs, using the appropriate **ETC Quick Field Reference Table**, or from first principles (formulas).

10. Apply a temperature correction to Kfs if deemed appropriate.

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![Engineering Technologies Canada Ltd.]

OWNER'S NAME: _____

SITE LOCATION: _____

PID #: _____

TEST PIT #: _____

TECHNICIAN: _____

DATE: _____

WEATHER/TEMPERATURE: _____

FIELD PERMEABILITY TEST #:

D – reservoir diameter (cm) _____	**Soil Texture** _____
d – well hole diameter (cm) _____	**Soil Structure** _____
H – height of water in well (cm) _____	**α* (cm-1)** _____
Depth below ground surface (cm) _____	**C – Factor** _____

TIME (min)	(1) CHANGE IN TIME (min)	RESERVOIR WATER LEVEL (WL) (cm)	(2) CHANGE IN WL (cm)	(2) ÷ (1) RATE OF FALL (R) (cm/min)